UNITED
NATIONS

E

Economic and Social Council

Distr.
LIMITED

E/CONF.85/L.28
9 July 1992

ENGLISH ONLY

SIXTH UNITED NATIONS CONFERENCE ON THE
STANDARDIZATION OF GEOGRAPHICAL NAMES
New York, 25 August-3 September 1992
Item 6 (c) of the provisional agenda*

TOPONYMIC DATA FILES: AUTOMATED DATA-PROCESSING (ADP) SYSTEMS

A syllabus for ADP technology and toponymic application

Paper submitted by the United States of America**

---

* E/CONF.85/1/Rev.1.

** Prepared by Roger L. Payne.

92-30191 3551b (E) 150792

1. Spatial science is an attempt to identify, analyse and classify the environment and its components. An essential, but often overlooked aspect of spatial science is what is referred to as toponymy or the study of geographic names. The phenomenon of naming is man's attempt to provide spatial points of reference in an otherwise culturally undefined geographical area. Until recently, the collection and analysis of names has been accomplished through labour-intensive manual processing, thereby prohibiting complete analysis. With the advent of computer technology, the ability to store, process and analyse vast quantities of names and associated information has created new frontiers in toponymy. Advances in computer technology, especially with regard to stand-alone hardware and related software, have greatly reduced the cost and increased the arena of toponymic research and application.

2. This course of instruction will address the application of automated data processing to the science of toponymy with special emphasis on techniques of data input and data retrieval. It is expected that the student will obtain an overall understanding of ADP methodology as applied to toponymic research.

3. Coursework will include special training in data collection, office processing and data entry. Additional training will include techniques of data retrieval utilizing a Data Base Management System (DBMS) in a stand-alone computer environment. The course will include both classroom and workshop training.

I. Introduction

- A. Terminology
- B. Standardization
- C. Overview of hardware
- D. Overview of software
- E. Data Base Management Systems

II. Fieldwork (as applied to ADP)

- A. Data-collection requirements
- B. Data recording

III. Office processing

- A. Data verification
- B. Loading the data

IV. Data-retrieval requirements and techniques

- A. Three principal operations
- B. Standard or routine retrieval
- C. Specialized retrieval
- D. Formatting reports
- E. Products

V. Maintenance procedures

A. Field techniques
B. Other written sources
C. Office processing (backups)
D. Updating the database
E. User tracking
F. Security

VI. Summary

A. Questions
B. Evaluations of workshop material
C. Variations in toponymic application based upon cultural interpretation; discussion

---

UNITED
NATIONS

E

Economic and Social Council

Distr.
LIMITED

E/CONF.85/L.29
9 July 1992

ENGLISH ONLY

SIXTH UNITED NATIONS CONFERENCE ON THE
STANDARDIZATION OF GEOGRAPHICAL NAMES
New York, 25 August-3 September 1992
Item 6 (d) of the provisional agenda*

TOPONYMIC DATA FILES: COMPATIBILITY AND STRUCTURE OF SYSTEMS

Possible procedures for development of an automated names processing system

Paper submitted by the United States of America**

---

* E/CONF.85/1/Rev.1.

** Prepared by Roger L. Payne.

92-30194 3486e (E) 150792

/...

1. Technical implementation of an automated names system may be accomplished in accordance with established and tested procedures. Basic to any automated database is selection of hardware and software, especially the Data Base Management System (DBMS). Paramount to developing an automated names system is identification and design of the required and desirable data elements as well as the structure of the data items within these data elements. The nature and extent of this task is directly related to the philosophical approach to populating the database, i.e. completeness with regard to all toponymic types or cartographic application only. A variety of other considerations are requisite, especially the scope of design and status of data compilation. Also, what is the type of system requirement? Is the system to be operated independently in a microcomputer environment or on a mainframe? Will it be networked, etc.?

2. It is not possible to completely determine requirements and potential implementation until some preliminary examination and investigation of existing capabilities are made. Some broad topics of consideration will be application, hardware, software (including DBMS), data collection, compilation and encoding, existing and modified field techniques, and office procedure, among others.

3. While an automated names database is an excellent vehicle for names analysis and assisting in names standardization, it is strongly recommended and in accordance with United Nations resolutions that a national names authority be established to adjudicate problems and serve as the single official source for names. Similarly, such a body would establish the officiality of the automated toponymic database.

4. The development of an automated toponymic database may proceed as follows.

I. Determine the functions the database is to perform.

A. What problems should it solve?

1. Co-locate geographic names information from disparate sources

2. Eliminate space requirements for storage of hard copy paper records

B. What processes should it make easier or more efficient?

1. Gazetteer production

2. Cartographic applications

3. Responses to requests for toponymic information

II. Based on the function of the database, determine the database content requirements.

A. What is the scope of the database content?

1. Will data be collected for the entire country, or for some civil, cultural, geographical or political subdivision of the country?

2. How extensive (or complete) should the data collection effort be?

(a) Identify and collect from all known applicable sources

(b) Prioritize applicable sources for limited data collection

B. What elements (fields) of information should be readily accessible and easily manipulated from within the database?

1. Toponymic data

(a) Name origin

(b) Etymology

(c) Name components (specific, generic)

(d) Other names (variant names)

2. Feature location data

(a) Point references (ex. geographic coordinates)

(i) Precision

(ii) Accuracy

(iii) Density

(b) Minor/major civil division references

(c) Map references

3. Historical and descriptive information about the feature

III. Determine the Database Management System (DBMS) most suited to requirements of the names processing system.

A. Flexibility of data definitions (field length and types)

B. Power of query language and report generator

C. Speed of query responses

D. Ease of maintenance (file/record building, back-up, etc.)

IV. Determine the methodology to be used for data collection.

A. Identify a base source (ex. map series) to which all information collected can be related

B. Determine how information should be extracted from other sources and transferred onto the base source

1. In what order should sources be researched?

2. How should attribute information be coded?

V. Establish data entry and validation procedures.

VI. Institute maintenance programme to ensure currentness, completeness, and continued viability of the database.